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PROVISIONAL SPECIFICATION

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Invention Title: **Apparatus for contained inspection and transportation of suspect objects**

The invention is described in the following statement:

Apparatus For Contained Inspection And Transportation Of Suspect Objects

5 Technical Field

The present invention relates to an apparatus for the contained inspection and transportation of objects suspected of being potentially dangerous, and in particular, to an apparatus for the contained inspection and possible subsequent transportation of envelopes, mail, packages, parcels, letters and the like, suspected of containing potentially dangerous substances.

Background Art

Subsequent to the terrorist activity of 11 September 2001 in the United States and the subsequent anthrax contaminated envelopes entering the mail system in the United States, many other countries have also experienced a spate of envelopes being received via the mail system which contain suspicious white powder.

Prior to being able to determine whether or not the white powder is a dangerous substance a response procedure is required to be initiated for safety reasons. The response procedure requires a full hazardous material handling procedure to be initiated by relevant emergency response authorities. The affected area, including all affected persons, are generally required to be contained until such time as the results of the analysis of the unknown substance becomes available. Such incidents result in stress and trauma to the affected persons, considerable loss of productivity and tie up emergency service resources.

Given that it is relatively simple for an antagonist to insert a substance into an envelope, or any other similar package, which is often a harmless white powder, there is a need to provide a response procedure that lessens the impact on affected persons, productivity and emergency services.

Laboratory "glove-box" type products are known that allow a user to insert his or her forearms and hands into gloves, allowing the user to safely handle objects within the glove-box. Such laboratory glove-boxes are bulky and are not designed to be transportable. Furthermore, they are typically also relatively
5 expensive. Other styles of glove-boxes are constructed of plastic sheeting and require frames and inert gases to inflate them, which further complicates the procedure for safe handling of potentially dangerous objects. In addition, presently known glove-boxes are not robust and portable which is a significant disadvantage.

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This identifies a need for apparatus for the contained inspection and possible transportation of potentially dangerous objects which overcomes or at least ameliorates the problems inherent in the prior art.

15 The reference to any prior art in this specification is not, and should not be taken as, an acknowledgment or any form of suggestion that that prior art forms part of the common general knowledge in Australia.

Disclosure Of Invention

20 In a broad form the present invention provides apparatus for the contained inspection and possible transportation of a potentially dangerous object, the apparatus including:

(1) an inspection unit, the inspection unit adapted to receive the object and provide a sealed environment for the subsequent inspection of the object, the
25 inspection unit further including at least one glove member allowing a user external to the sealed environment to manipulate the object within the inspection unit;

(2) a transportation unit adapted to receive the inspection unit and provide a sealed environment for the subsequent transportation of the inspection
30 unit containing the object;

whereby, the inspection unit and the transportation unit are portable.

The present invention according to one aspect provides that at least a lid section of the inspection unit is substantially transparent. The present invention according to another aspect provides that at least a lower face of the inspection unit is opaque, preferably of a dark colour.

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In accordance with a specific embodiment of the present invention, the object is an envelope, mail, package, parcel, letter or the like.

10 In accordance with a further specific embodiment of the present invention, the inspection unit includes a lid section and a body section adapted to be clamped together. In accordance with still a further specific embodiment of the present invention, the transportation unit includes a lid section and a body section adapted to be clamped together. In accordance with yet another specific embodiment of the present invention, the transportation unit includes a lid section and a body
15 section adapted to be press-sealed together.

Preferably, the sealed environments of the inspection unit and the transportation unit are substantially airtight.

20 In accordance with yet another specific embodiment of the present invention, the transportation unit is resilient against external forces and/or shocks.

In accordance with still yet another specific embodiment of the present invention, the inspection unit includes integrated magnifying means. The present invention
25 according to another aspect provides that the transportation unit includes padding and/or shock absorbing material.

Brief description Of Figures

30 The present invention should become apparent from the following description, which is given by way of example only, of a preferred but non-limiting embodiment thereof, described in connection with the accompanying figures.

Figure 1 illustrates an embodiment of the present invention, wherein the figure shows an overall perspective view of the apparatus.

Figure 2 illustrates an embodiment of the present invention, wherein the figure shows a perspective view of the inspection unit.

Figure 3 illustrates an embodiment of the present invention, wherein the figure shows a perspective view of the transportation unit.

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Modes For Carrying Out The Invention

The following modes are described in order to provide a more precise understanding of the subject matter of the present invention and should not be considered as limiting the scope of the present invention. In the figures, incorporated to illustrate the features of the present invention, like reference numerals are used to identify like parts throughout the figures.

In a preferred embodiment apparatus is provided which allows a user to examine suspicious mail or the like in an airtight environment, whereby the mail and its contents can be visually examined within the airtight environment. If further analysis of the mail and/or its contents are required the mail can be maintained in the airtight environment and transferred to a second airtight environment which provides important additional protection during transportation to a specialist analysis site, for example a biochemical or forensic laboratory.

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Referring to figure 1, when a potentially dangerous object 10 is received and identified as being potentially dangerous, the object 10 is placed in the inspection unit 20. To place the object 10 in the inspection unit 20 the lid section 30 is removed or opened and the object 10 placed in the body section 40 of the inspection unit 20. The lid section 30 is then sealed against the body section 40 to provide a sealed environment containing the object 10.

After further examination of the object 10 within the inspection unit 20, should the user believe that further analysis of the object 10 or its contents is required, the inspection unit 20 is then wholly placed within a transportation unit 50. The inspection unit 20 is placed into the body section 60 of the transportation unit 50 after which the lid section 70 of the transportation unit 50 is sealed to the body

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section 60, thereby providing a further sealed environment that contains the inspection unit 20.

5 The potentially dangerous object 10 is hence contained within two separate sealed environments and can then be relatively safely transported to an analysis site. Both the inspection unit 20 and the transportation unit 50 are preferably of a suitable size and material so that they are portable allowing ease of transportation of the potentially dangerous object 10 to the analysis site.

10 Referring to figure 2, a preferred embodiment of the inspection unit 20 is illustrated. The lid section 30 is substantially transparent allowing the user to visually inspect the object 10. Parts of the body section 40 may also be substantially transparent. The lower face 80 of the body section 40 is opaque, preferably of a dark colour such as black or dark blue. This assists the user in
15 visually identifying a white powder against a dark background. Other regions of the body section may similarly be a dark colour if desired. Preferably, the inspection unit 20 is made of moulded plastics.

The lid section 30 and the body section 40 are adapted to be clamped together
20 using clamp means 90a, 90b, 90c and 90d. It should be noted that a varying number of clamp means 90 can be provided as required. Also, in various embodiments the clamp means 90 can be provided at different locations or in different configurations than illustrated. The clamp means may be any type of device, or mixture of devices, which assist to secure or attach the lid section 30 to
25 the body section 40 to provide a sealed environment. Some of the clamp means, for example 90a and 90b, may be substituted for hinges, or other hinge-type mechanisms, so that the lid section 30 may be rotatably retained relative to the body section 40.

30 A seal 100 is also provided at or near the interface between the lid section 30 and the body section 40 to assist in providing an airtight environment within the inspection unit 20.

The user inserts both forearms/hands through the hand access orifices 110 so that the glove members 120 are fitted over the user's hands. The user is then able to use his or her hands to manipulate the object 10 within the sealed environment of the inspection unit 20.

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The lid section 30 can also be provided with a magnifying section 130 so that when the user visually inspects the object 10 within the inspection unit 20 the contents of the inspection unit 20 are magnified to the eyes of the user.

10 Referring to figure 3, the figure illustrates a preferred embodiment of the transportation unit 50. The transportation unit 50 preferably includes a seal 140 that assists to provide an airtight environment when the lid section 70 is engaged with the body section 60.

15 As for the inspection unit 20, clamp means 150 can be provided to affix the lid section 70 to the body section 60. The clamping means 150 can be provided in any configuration as is deemed suitable. Alternatively, clamp means 150 may not be provided, but the lid section 70 maybe adapted to press-seal against the body section 60. Any mechanical structure that allows the lid section 70 to affix,
20 engage, secure, lock or the like with the body section 60, and provide a sealed environment, can be utilised in the present invention.

The transportation unit 50 is preferably made of a resilient plastic so that it can withstand external forces and/or shocks. Furthermore, the transportation unit 50
25 may be provided with padding and/or shock absorbing material. This assists in insulating the inspection unit 20 from damage or breech during transportation of the potentially dangerous object 10 to the analysis site.

The following further example provides a more detailed outline of an embodiment
30 of the present invention. The example is intended to be merely illustrative and not limiting to the scope of the present invention.

The apparatus for the contained inspection and transportation of suspect objects provides a light-weight, airtight and durable unit for the examination and

transportation of mail suspected to contain a hazardous substance, for example a powder substance. The apparatus is preferably made of moulded plastic consisting of a tub-like base which is provided with side entry portals for a user's hands to slip into built-in gloves. The base of the tub (body section 40) is preferably dark (black or dark blue) to provide the best contrast against a light coloured powdered substance. A moulded lid section is fitted with an airtight seal and is further secured to the tub by locking clamps on each side which should be able to survive dropping or other impacts intact. The lid section is transparent and is optionally provided with an in-built magnifying section allowing magnified examination of suspect mail.

Implements can be left within the apparatus for use by the user when inspecting mail. For example, a round-end flat blade letter opener could be provided. The total weight of the apparatus is preferably less than 6kg and is able to be easily handled without risk of the integrity of the sealed environment being breeched. A transportation unit of the apparatus receives the inspection unit and thus provides double-wall security during transport in the event of dropping or accident occurring. Safety instructions and a preferred procedure to follow in the event of the receipt of suspicious mail can be provided to complement the apparatus.

The inspection unit is designed to allow the safe examination of mail, including larger envelopes, for example A4 size and small parcels, in a wholly contained environment. Once mail is identified as being suspicious and is believed to contain a hazardous material, for example a powder substance, the mail is placed into the inspection unit and the lid section is closed and locked. The suspicious mail is then opened or further inspected in the inspection unit with the user provided with a clear view through the lid section. If the mail contains any contaminant the inspection unit is then wholly placed within the transportation unit and transported to a suitable examination laboratory or analysis site by the appropriate personnel. This process also reduces the number of persons handling the suspicious mail thereby allowing preservation of possible forensic evidence.

Components of the apparatus are preferably single pieces of moulded plastic, the glove members could be vinyl gloves or made from any other suitable material.

The transportation unit would preferably be clearly marked as containing bio-hazardous material. Seals used in the apparatus could be soft rubber seals.

Thus, there has been provided in accordance with the present invention, apparatus
5 for the contained inspection and, if required, transportation of potentially dangerous objects.

The invention may also be said to broadly consist in the parts, elements and features referred to or indicated herein, individually or collectively, in any or all
10 combinations of two or more of the parts, elements or features, and where specific integers are mentioned herein which have known equivalents in the art to which the invention relates, such known equivalents are deemed to be incorporated herein as if individually set forth.

15 Although the preferred embodiment has been described in detail, it should be understood that various changes, substitutions, and alterations can be made herein by one of ordinary skill in the art without departing from the scope of the present invention.

20 Dated this 12th day of December 2002

TIM ROBERTS and MARGARET HEAD

By Their Patent Attorneys

DAVIES COLLISON CAVE

Abstract

Apparatus for the contained inspection and possible transportation of a
5 potentially dangerous object, the apparatus including:

(1) an inspection unit, the inspection unit adapted to receive the object
and provide a sealed environment for the subsequent inspection of the object, the
inspection unit further including at least one glove member allowing a user
external to the sealed environment to manipulate the object within the inspection
10 unit;

(2) a transportation unit adapted to receive the inspection unit and
provide a sealed environment for the subsequent transportation of the inspection
unit containing the object;

whereby, the inspection unit and the transportation unit are portable.

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FIGURE 1

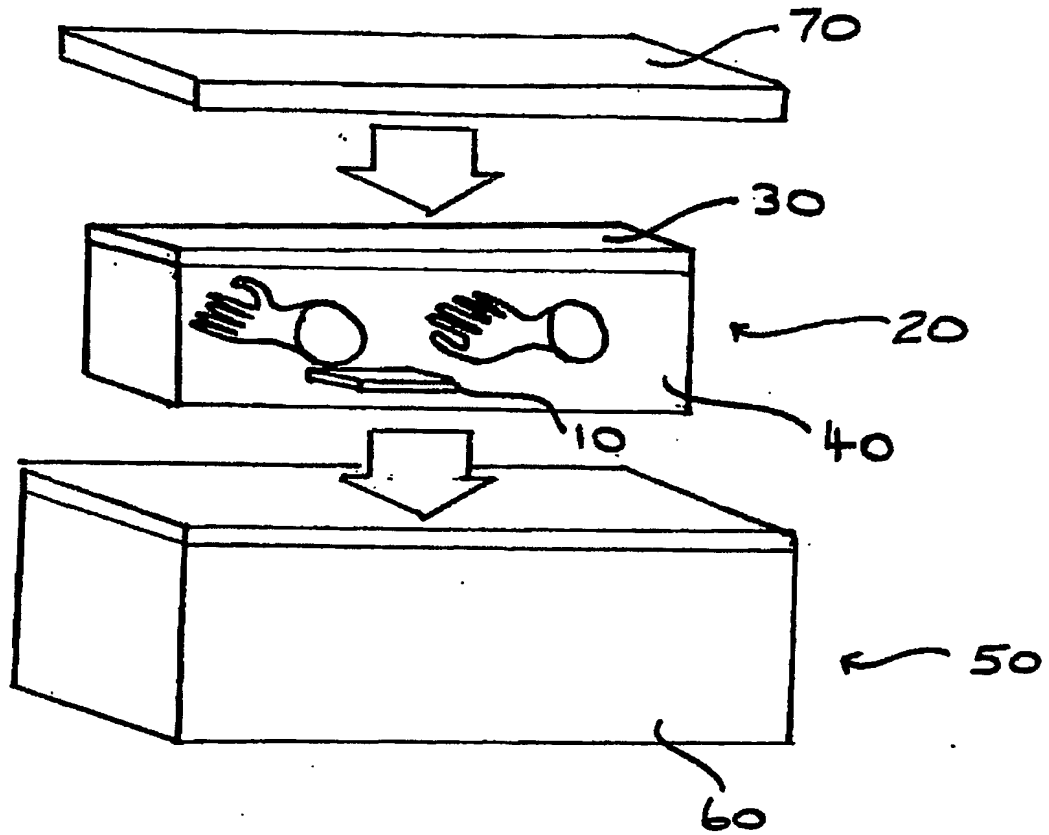
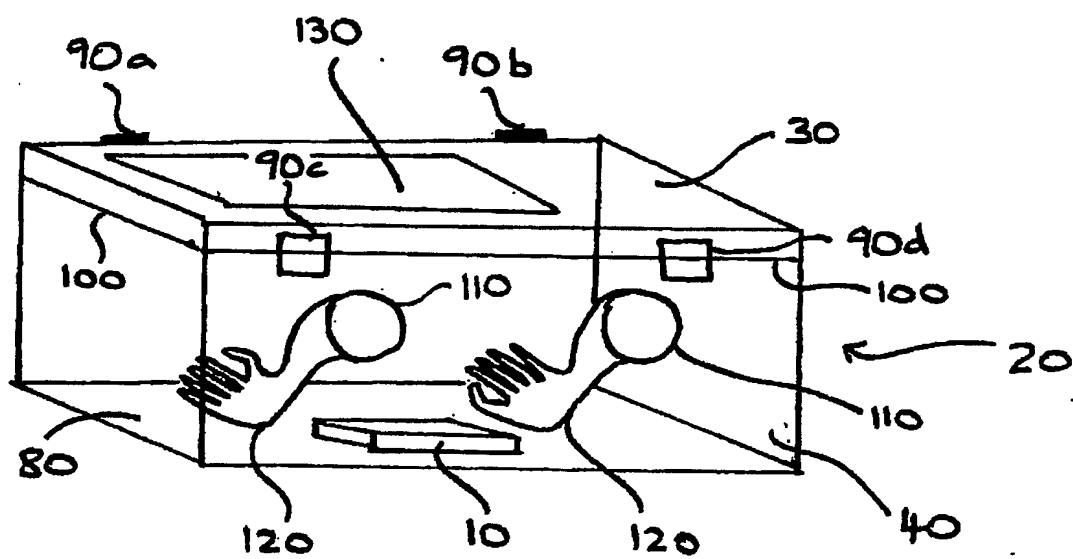
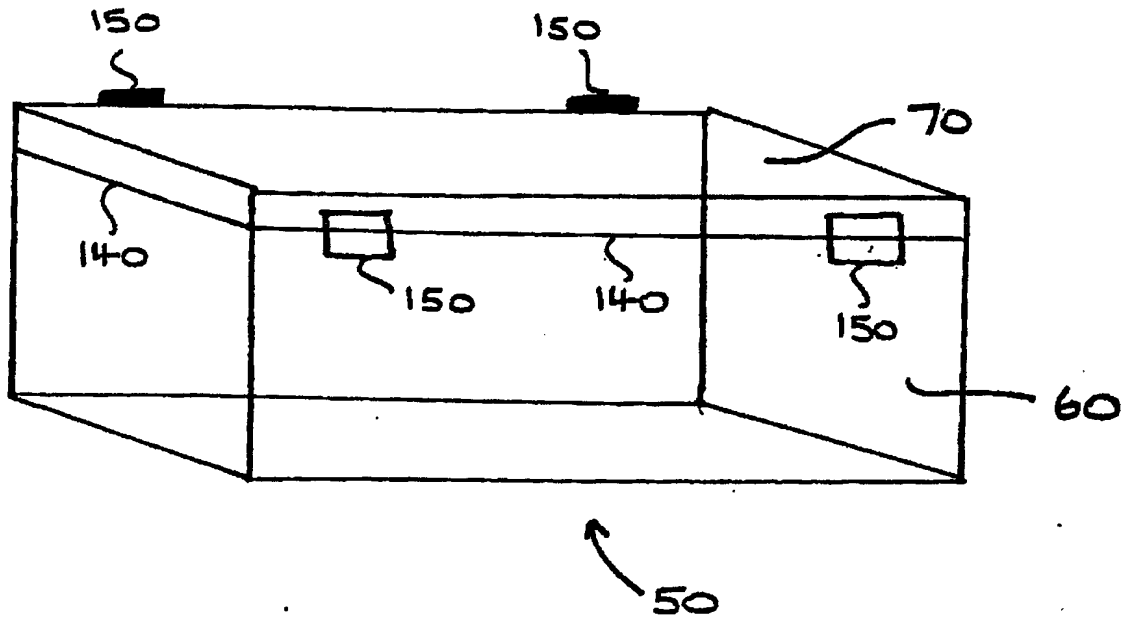


FIGURE 2



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FIGURE 3



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